Remarks

Obviousness-Type Double Patenting Rejection

In the Office Action dated 6-7-04, the Examiner rejected claims 1-3, 5-6, 8-11, 13-16 and 18-19 under the judicially created doctrine of obviousness-type double patenting citing US patent 6593009 in view of JP 10-41134 (Kanazawa, et al.) a machine translation of which was attached. The Examiner cited Kanazawa as teaching the equivalence of CrTi and CrTiAl. The applicants respectfully disagree. Kanazawa teaches the substitution of CrTiAl for CrTi in a specific layer results in improvement; however, there is no suggestion in Kanazawa that CrTi and CrTiAl are equivalent in general. Kanazawa's layer structure is:

Carbon overcoat
CoCrPtTa magnetic layer
CrTiAl or CrMoAl
Substrate.

It is clear that Kanazawa is using the CrTiAl or CrMoAl as an underlayer, since it in contact with the magnetic layer. Historically, the underlayer was the first layer on the substrate, but this does not make an underlayer a pre-seed layer as the applicants are claiming. Thus, Kanazawa does not teach the equivalence of CrTiAl and CrTi as pre-seed layers. Kanazawa mentions no seed layers and is not using CrTiAl as a pre-seed layer; therefore, Kanazawa cannot logically be combined with 6593009.

Each of applicants' independent claims as currently amended make it clear that applicants' use of CrTiAl is as a pre-seed layer which is not in contact with the magnetic layer.

Another distinguishing point between applicants pre-seed layer and Kanazawa's underlayer is that an underlayer is crystalline. This is confirmed in Kanazawa in paragraph 007: "...each alloy crystal ..." Claim 1 includes the limitation that the CrTiAl is amorphous or nanocrystalline.

Applicants dependent claims 7, 12 and 17 include the limitation that the CrTiAl has approximately from 5 to 20 at.% aluminum with the remainder being

approximately equal atomic percentages of chromium and titanium. For 5 at.% Al this means Cr = Ti = 47.5 at.%. Likewise for 20 at.% Al this means Cr = Ti = 40 at.%. Thus, the total Ti + Al ranges from 52.5 at.% to 60 at.%. This is clearly outside of the range taught by Kanazawa of Ti + Al less than 40 at.%. (See paragraph 007). Thus, Kanazawa teaches away from applicants claimed composition.

Applicants' claims 2, 5, 10 and 15 include RuAl as a seed layer above the CrTiAl pre-seed layer. Kanazawa mentions no seed layers and is not using CrTiAl as a pre-seed layer; therefore, Kanazawa cannot logically be combined with 6593009 to arrive at the combination of CrTiAl and RuAl.

Section 102 Rejections

In the Office Action the Examiner rejected claim 1 under section 102(e) citing US patent 6613460 to Abarra, et al. The Examiner cited Abarra as teaching a recording medium with a nanocrystalline underlayer. Applicants respectfully disagree. The Examiner cited col. 4, lines 35-41 where Abarra says:

> In the magnetic recording medium, the underlayer having the FCC $L1_2$ crystalline structure may be selected from a group of Al_5CuZr_2, Al_5CuHf_2, $(AlCr)_3Ti$, $Al_{67}Cr_8Ti_{25}$, ...

It is clear from this quote Abarra is discussing a crystalline underlayer, not a pre-seed layer as the applicants claim. Abarra's layer structure includes a seed layer (element 3 in Figure 1). Abarra's seed layer is made of a Cr-based alloy including a material selected from a group of Mo, Ti, V and W. Cr-rich alloys with the BCC crystal structure tend to grow a (002) texture on oxidized NiP. (col. 4, lines 23-26).

Thus, Abarra does not teach the use of CrTiAl as a pre-seed layer as applicants claim.

In the Office Action the Examiner rejected claims 1 and 3 under section 102(b) citing JP 10-41134 (Kanazawa, et al.) which is discussed above. Since Kanazawa does not teach the layer structure as claimed in each of applicants

amended claims, Kanazawa does not anticipate the invention. Kanazawa does not teach a pre-seed layer or seed layer of any kind.

Section 103 Rejections

In the Office Action the Examiner rejected claims 1-3, 5-6, 8-11, 13-16 and 18-19 under section 103(a) citing US patent 6593009 to Bian, et al., in view of Kanazawa. The Examiner noted that has a common inventor with the present application and suggested that a showing could be made that it is not citable as prior art under section 103 if, in fact, it is not the invention "by another." While applicants believe it is true that the invention of 6593009 is not prior art under 103(a), the applicants believe that point to be moot in light of the substantive argument that Kanazawa does not teach the use of CrTiAl as pre-seed layer as discussed above.

The Examiner rejected claim 4 citing Abarra, et al., in view of Oka, et al. 6607848. While the rejected states that it is a 102(e) rejection, it appears that the rejection is actually meant to be an obviousness rejection under section 103. The distinguishing points for Abarra have been discussed above and apply to this rejection as well. Oka is cited for circumferential texturing of glass substrates; therefore, Oka does not supply the missing elements from Abarra. Neither Abarra nor Oka teach the use of CrTiAl as a pre-seed as claimed by applicants.

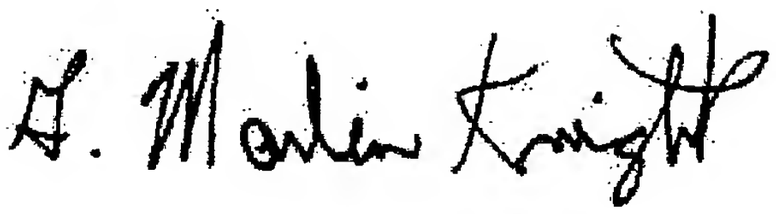
AllowableSubjectMatter

The Examiner noted that dependent claims 7, 12 and 17 would be allowable if rewritten in independent form.

Conclusion

For the foregoing reasons, applicants believe that the claims as amended are patentable over the prior art and that the rejections should be withdrawn.

Respectfully submitted,



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